

What is claimed is:

1. An optical system for a gas component analysis, comprising:

a first emitter located on a first side of a vehicle path for emitting a first light beam having a first spectrum across the vehicle path;

a first receiver for receiving the first light beam;

a plurality of filter elements; and

a spinning mirror face that reflects the beam so that the beam reaches each of the filter elements in sequence.

2. The system according to claim 1, further comprising:

a second emitter located on the first side of the vehicle path for emitting a second light beam at a second spectrum across the vehicle path; and

a second receiver for receiving the second light beam.

3. The system according to claim 2, further comprising:

a third emitter for emitting a third light beam; and

a third light receiver for detecting the third light beam, wherein the third light beam travels along a third path, and at least a portion of the third path overlaps with at least a portion of the second path.

4. The system according to claim 2, wherein the light beam is projected across a vehicle path, and the first and second emitters and first and second receivers are located on one side of the vehicle path, and wherein the system comprises a reflector located at the other

side of the vehicle path to direct the first and second beams from the first and second emitters to the first and second receivers respectively.

5. The system according to claim 3, when the reflector is a retroreflective assembly having at least three reflective faces, and wherein at least one of the beams travels across the road at a first height above the road, and returns across the road at a second height above the road different from the first height.

6. The system according to claim 1, wherein the first emitter is an infrared emitter.

7. The system according to claim 2, wherein the second emitter is one of an infrared, ultraviolet light, or visible light emitter.

8. The system according to claim 2, wherein at least a portion of the first beam overlaps at least a portion of the second beam.

9. The system according to claim 3, wherein the first emitter is an infrared emitter, and wherein the second emitter is an ultraviolet light emitter, and wherein the third emitter is a visible light emitter.

10. The system according to claim 9, wherein at least a portion of the third beam overlaps at least a portion of at least one of the first and second beams.

11. The system according to claim 1, wherein the spinning mirror face has a plurality of faces.

12. The system according to claim 1, further comprising an ellipsoidal mirror that receives the beam from the spinning mirror and directs the beam through the filters.

13. The system according to claim 1, wherein the filter elements are removable.

14. The system according to claim 1, wherein the number of filter elements is at least four.

15. The system according to claim 1, wherein the filter elements are disposed at regular angular intervals.

16. The system according to claim 1, further comprising at least one cell positioned in the optical path along with a filter element.

17. The system according to claim 1, further comprising at least one cell used in place of a filter element.

18. The system according to claim 1, wherein the mirror receives the beam after the beam has passed across the roadway.

19. The system according to claim 12, further comprising a spherical mirror that receives the beam from the filters, and focuses and directs the beam to the receiver.

20. An optical system for a gas component analysis, comprising:

means located on a first side of a vehicle path for emitting a first light beam having a first spectrum across the vehicle path;

means for receiving the first light beam; and

spinning means for reflecting the beam so that the beam reaches the filter elements in sequence.

21. The system according to claim 17, wherein the emitting means emits infrared light.

22. The system according to claim 17, wherein the spinning means reflects the beam after the beam has crossed the vehicle path.

23. A method for gas component analysis, comprising the steps of:

emitting a first light beam having a first spectrum across the vehicle path;

receiving the first light beam; and

reflecting the beam so that the beam reaches the filter elements in sequence.